UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,743	12/20/2001	David M. Weber	01-647	3790

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ART UNIT	PAPER NUMBER
2182	

DATE MAILED: 07/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 December 2001</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
     closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-17</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-17</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>20 December 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
     application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1.   Claims 1-6, 8-11 and 13-17 are rejected under 35 U.S.C. 102(b) as being

anticipated by Fredericks et al. U.S. Pat. No. 4,939,735.

2.   As to claim 1, Fredericks et al. teach apparatus, comprising:

(a)   a single die (item 17, fig. 2);

(b)   a first circuitry disposed on said single die including:

a deserializer for converting at least one serial differential bit stream

into a character stream (item 90B; fig. 2);

a decoder receiving said character stream to form a decoded data

stream (item 100B; fig. 2); and

a means for aggregating said decoded data stream and

reconstructing a parallel word according to a desired protocol definition

(col. 2, line 61 – col. 3, line 36; fig. 2);

(c)   a second circuitry disposed on said single die including:

a means for presenting a second parallel word according to said

desired protocol definition to form an altered data stream (item 40A; fig. 2;

col. 2, line 61- col. 3, line 36),

an encoder receiving said altered data stream to form an encoded

data stream (item 50A; fig. 2);

a serializer for converting said encoded data stream into said at

least one serial differential bit stream (item 60A; fig. 2), wherein said first

circuitry and said second circuitry are capable of implementing at least two

interconnected protocol definitions (fig. 2; col. 2, line 61- col. 3, line 36;

col. 10, lines 6-54).

3.   As to claim 2, Fredericks et al. teach apparatus, wherein said at least two

interconnect protocol definitions include a single-thread, multiple-speed protocol

method (when converted by serializer; col. 6, lines 40-48; fig. 2), a multiple-

thread, single-speed protocol method (when converted by deserializer; col. 6,

lines 40-48; fig. 2), and a multiple-thread, multiple-speed protocol method.

4.   As to claim 3, Fredericks et al. teach apparatus, wherein at least two

interconnect protocol definitions include a 10 Gigabit Fibre Channel protocol

definition and a 4 Gigabit, 2 Gigabit, 1 Gigabit Fibre Channel protocol definition

(as these speeds are common in computer communications such as SONET and

others; definition of 10Gbe, *Newton's telecom dictionary, 18th edition*; col. 1, line

6 – col. 2, lines 59).

5.   As to claim 4, Fredericks et al. teach method, comprising:

(a)   converting a at least one serial data stream to a character stream (via item

90B; fig. 2);

(b)   decoding of said character stream to form a decoded data stream (item

100B; fig. 2); and

(c)   aggregating said decoded data stream according to a desired interconnect

protocol definition (fig. 2; col. 2, line 61- col. 3, line 36);

wherein circuitry disposed on a single die is capable of transforming at least one

serial bit stream into a word in accordance with at least two interconnect protocol

definitions (fig. 2; col. 2, line 61- col. 3, line 36; col. 10, lines 6-54)

6.   As to claim 5, Fredericks et al. teach method, wherein said at least two

interconnect protocol definitions include a single-thread, multiple-speed protocol

method (when converted by serializer; col. 6, lines 40-48; fig. 2), a multiple-

thread, single-speed protocol method (when converted by deserializer; col. 6,

lines 40-48; fig. 2), and a multiple-thread, multiple-speed protocol method.

7.   As to claim 6, Fredericks et al. teach method, wherein at least two

interconnect protocol definitions include a 10 Gigabit Fibre Channel protocol

definition and a 4 Gigabit, 2 Gigabit, 1 Gigabit Fibre Channel protocol definition

(as these speeds are common in computer communications such as SONET and

others; definition of 10Gbe, *Newton's telecom dictionary, 18th edition*; col. 1, line

6 – col. 2, lines 59).

8.   As to claim 8, Fredericks et al. teach method, wherein aggregating of said

decoded data stream aligns said decoded data stream to reconstruct said

parallel data word according to said desired interconnect protocol definition (fig.

2; col. 2, line 61-col. 3, line 36).

9.   As to claim 9, Fredericks et al. teach method, comprising:

(a)   selecting a word stream for transmission (item 20; fig. 2);

(b)   presenting said word stream according to a desired interconnect protocol

        definition to form an altered data stream (via item 90B or 20; fig. 2);

(c)   encoding said altered data stream to form an encoded data stream (50A;

        fig. 2); and

(d)   converting said encoded data stream to at least one serial differential bit

        stream (item 60A; fig. 2); wherein circuitry disposed on a single die is

        capable of transforming said word stream into at least one serial

        differential bit stream in accordance with at least two interconnect protocol

        definitions (fig. 2; col. 2, line 61- col. 3, line 36; col. 10, lines 6-54).

10.   As to claim 10, Fredericks et al. teach method, wherein said at least two

interconnect protocol definitions include a single-thread, multiple-speed protocol

method (when converted by serializer; col. 6, lines 40-48; fig. 2), a multiple-

thread, single-speed protocol method (when converted by deserializer; col. 6,

lines 40-48; fig. 2), and a multiple-thread, multiple-speed protocol method.

11.   As to claim 11, Fredericks et al. teach method, wherein at least two interconnect protocol definitions include a 10 Gigabit Fibre Channel protocol definition and a 4 Gigabit, 2 Gigabit, 1 Gigabit Fibre Channel protocol definition (as these speeds are common in computer communications such as SONET and others; definition of 10Gbe, *Newton's telecom dictionary, 18th edition*; col. 1, line 6 – col. 2, lines 59).

12.   As to claim 13, Fredericks et al. teach apparatus, comprising:

(a)   a single die (item 17; fig. 2);

(b)   means for transforming at least one serial differential bit stream into a parallel word (item 20; fig. 2); said transforming means being disposed on said single die (fig. 2);

(c)   means for converting a second parallel word into at least one serial differential bit stream (item 16; fig. 2); said converting means being disposed on said single die (fig. 2); said converting means including an input selector in which said apparatus operates according to a selected protocol definition; wherein said transforming means and said converting means are capable of implementing at least two interconnect protocol definitions (fig. 2; col. 2, line 61 – col. 3, line 36; col. 10, lines 6-54).

13.   As to claim 14, Fredericks et al. teach apparatus, wherein said at least two interconnect protocol definitions include a single-thread, multiple-speed protocol method (when converted by serializer; col. 6, lines 40-48; fig. 2), a multiple-thread, single-speed protocol method (when converted by deserializer; col. 6, lines 40-48; fig. 2), and a multiple-thread, multiple-speed protocol method.

14.   As to claim 15, Fredericks et al. teach apparatus, wherein at least two interconnect protocol definitions include a 10 Gigabit Fibre Channel protocol definition and a 4 Gigabit, 2 Gigabit, 1 Gigabit Fibre Channel protocol definition (as these speeds are common in computer communications such as SONET and others; definition of 10Gbe, *Newton's telecom dictionary, 18th edition*; col. 1, line 6 – col. 2, lines 59).

15.   As to claims 16 and 17, Fredericks et al. teach apparatus, wherein transforming means includes a deserializer, a decoder, and an aggregrator capable of implementing at least two interconnect protocol definitions and converting means includes a data presenter, an encoder, and a serializer capable of implementing at least two interconnect protocol definitions (fig. 2; col. 2, line 61- col. 3, line 36; col. 6, lines 40-48).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16.   Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Fredericks et al. U.S. Pat. No. 4,939,735 in view of Yoshida,

U.S. Pat. No. 6,052,820.

17.   As to claims 7 and 12, Fredericks et al. do not teach converts 10 bits of

data to 8 bits of data and converts 8 bits of data to 10 bits of data.

However, Yoshida teaches converts 10 bits of data to 8 bits of data and converts

8 bits of data to 10 bits of data (fig. 16; col. 2, lines 3-55). It would have been

obvious to one of ordinary skill in the art at the time of invention to combine the

teachings of Fredericks et al. and Yoshida because that would provide simple

structure with very high reliability of handling 8 bit symbols and eliminating

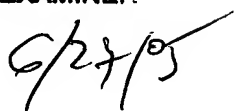redundant circuits (col. 4, lines 44-49).

18.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad O. Farooq whose telephone number is (571) 272-4144. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on (571) 272-4083. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KIM HUYNH
PRIMARY EXAMINER

Mohammad O. Farooq
June 23, 2005